

REMARKS

This is in full and timely response to the Office Action mailed on October 20, 2008.

Because January 20, 2009, three months after the mailing date of the Office Action, falls on a Federal holiday in the District of Columbia, the period for response is extended to January 21, 2009, which is the next day that is neither a Saturday, Sunday nor a Federal holiday in the District of Columbia.

Claims 7, 16 and 19-34 are currently pending in this application, with claims 7, 16 and 19 being independent. *No new matter has been added.*

Reexamination in light of the following remarks is respectfully requested.

Drawings

While not conceding the propriety of the drawing objections and in order to advance the prosecution of the present application, claims 3 and 4 have been canceled.

Withdrawal of this objection is respectfully requested.

Claim rejections

Rejection of claims 1-6 and 8-15 - While not conceding the propriety of these rejections and in order to advance the prosecution of the present application, claims 1-6 and 8-15 have been canceled.

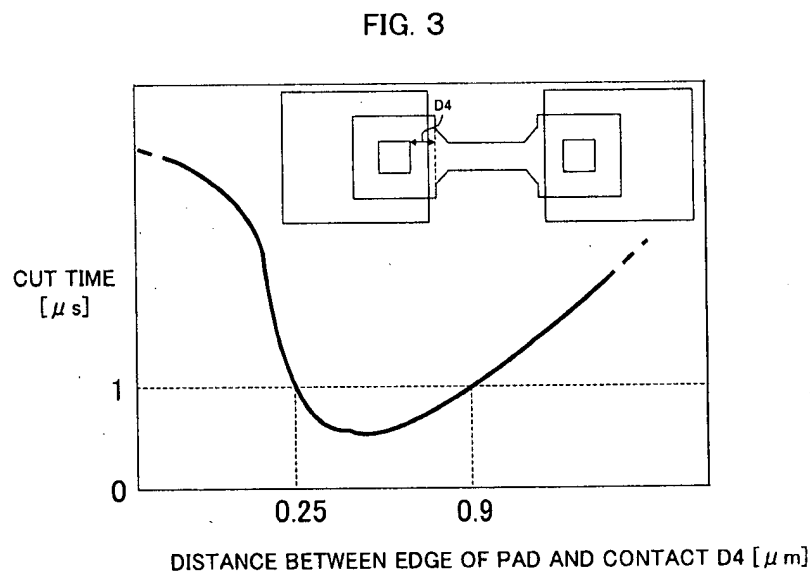
Withdrawal of these rejections is respectfully requested.

Rejection of claim 7 - Claim 7 has been placed into independent form. If the allowance of the claims is not forthcoming and a new ground of rejection is made against claims 7 and 14, then a new non-final Office Action is respectfully requested.

The rejection of claim 7 is traversed at least for the following reasons.

Claims 7 and 14 - Within claims 7, in at least one of the above two conductive layers (5A, 5B), a distance (D4) from the contact regions (4A, 4B) connecting the conductive layers (5A, 5B) and the pads (3Ba, 3Bb) to the pad (3Ba, 3Bb) edges contacting the fuse body (3A) is 0.25 μm to 0.90 μm .

Figure 3 of the specification as originally filed is provided hereinbelow.



Page 7 of the Office Action refers to the “Background Art” of the specification for the present application (AAPA) and U.S. Patent No. 5,708,291 (Bohr) in rejecting claims 7 and 14 under 35 U.S.C. §103.

AAPA - The Office Action readily admits that AAPA fails to disclose a distance from the contact regions (103A, 1035B) connecting the conductive layers (104A, 104B) and the pads (102Ba, 102Bb) to edges of the pad contacting the fuse body (3A) is 0.25 to 0.90 μm (Office Action at page 7).

Bohr - The Office Action readily admits that Bohr does not explicitly disclose the distance from the contact regions connecting the conductive layers and the pads to the pad edges contacting the fuse body is 0.25 μm to 0.90 μm (Office Action at page 7).

As a gap-filler, the Office Action contends that based on the scale of the drawings and the discussion that the dimensions can vary, optimizing the distance from the contact regions would not be cause for undue experimentation (Office Action at pages 7-8).

In response, regarding the Figures of Bohr, it is well established under U.S. patent practice and procedures that drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes *if the specification is completely silent* on the issue. *Hockerson-Halberstadt Inc. v. Avia Group International Inc.*, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000). See M.P.E.P. §2125 (*proportions of features in a drawing are not evidence of actual proportions when drawings are not drawn to scale*).

Moreover, arguments based on the measurement of a drawing *are of little value absent any written description* in the specification of the quantitative values allegedly shown within the drawings. *In re Wright*, 569 F.2d 1124, 1127, 193 USPQ 332, 335 (CCPA 1977).

Here, the Office Action fails to identify any written description in the specification of Bohr for the teaching that the distance from the contact regions connecting the conductive layers and the pads to the pad edges contacting the fuse body is 0.25 μm to 0.90 μm .

A patentable invention, within the ambit of 35 U.S.C. §103 may result even if the inventor has, in effect, merely combined features, old in the art, for their known purpose, without producing anything beyond the results inherent in their use. *In re Spinnoble*, 160 USPQ 237, 243

(CCPA 1969). However, such a retrospective view of any alleged “inherent” feature within Bohr is not a substitute for some teaching or suggestion supporting an obviousness rejection. *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

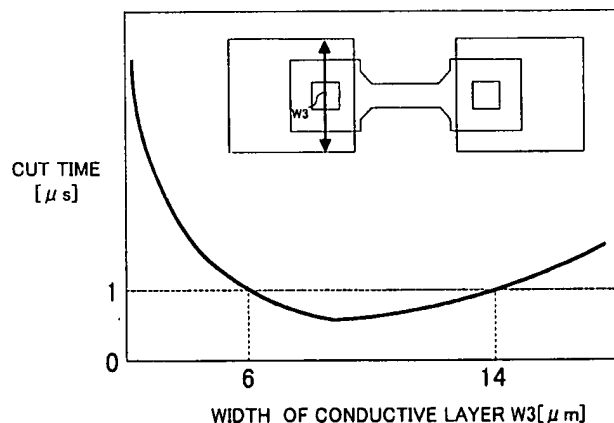
- ***Thus, AAPA and Bohr, either individually or as a whole, fail to show as teaching that the distance from the contact regions connecting the conductive layers and the pads to the pad edges contacting the fuse body is 0.25 μm to 0.90 μm .***

Claim 16 - Claim 16 is drawn to a semiconductor device comprising a fuse (3) including a conductive material in a multilayer structure on a semiconductor substrate (1), said fuse (3) having a fuse body (3A) and two pads (3Ba, 3Bb) connected by the fuse body (3A), conductive layers (5A, 5B) connected one by one to said two pads (3Ba, 3Bb),

characterized in that, in at least one of the above two conductive layers (5A, 5B), a width (W3) of the portions of the conductive layers (5A, 5B) including the contact regions (4A, 4B) with the pads (3Ba, 3Bb) is 6 μm to 14 μm .

Figure 2 of the specification as originally filed is provided hereinbelow.

FIG. 2



AAPA - The Office Action readily admits that AAPA fails to disclose that the width of the portions of the conductive layers including the contact regions with the pads is 6 μm to 14 μm (Office Action at page 8).

Bohr - The Office Action readily admits that Bohr does not explicitly disclose the does not explicitly disclose the width of the portion of the conductive layers including the contact regions (120) (Office Action at page 8).

As a gap-filler, the Office Action contends that based on the scale of the drawings and the discussion that the dimensions can vary, optimizing the width of the conductive layers would not be cause for undue experimentation (Office Action at page 8).

Here, the Office Action fails to identify any written description in the specification of Bohr for the teaching that a width of the portions of the conductive layers including the contact regions with the pads is 6 μm to 14 μm .

- *Thus, AAPA and Bohr, either individually or as a whole, fail to disclose, teach, or suggest a device characterized in that, in at least one of the above two conductive layers (5A, 5B), a width (W3) of the portions of the conductive layers (5A, 5B) including the contact regions (4A, 4B) with the pads (3Ba, 3Bb) is 6 μm to 14 μm .*

Withdrawal of the rejections is respectfully requested.

Newly added claims

Claims 19-34 - Claims 20-34 are dependent upon claim 19. Claim 19 is drawn to a semiconductor device comprising:

a fuse body (3A) connected to a pad (3Ba), said fuse body (3A) including a fuse line (3Aa) and two connections (3Ab);

an inter-layer insulating film (4) on said pad (3Ba), an opening (4A) through said inter-layer insulating film (4) exposing said pad (3Ba);

a conductive layer (5A) on said inter-layer insulating film (4), said conductive layer (5A) within said opening (4A) being electrically connected to said pad (3Ba),

wherein at least one of the following is present:

(a) the width (W3) of said conductive layer (5A) is 6 μm to 14 μm ,

(b) the distance (D4) between said fuse line (3Aa) and said opening (4A) is 0.25 μm to 0.90 μm ,

(c) said length (L1) of the fuse body (3A) is 1.8 μm to 20 μm .

AAPA - The Office Action readily admits that AAPA fails to disclose that the width of the portions of the conductive layers including the contact regions with the pads is 6 μm to 14 μm (Office Action at page 8).

The Office Action readily admits that AAPA fails to disclose a distance from the contact regions (103A, 1035B) connecting the conductive layers (104A, 104B) and the pads (102Ba, 102Bb) to edges of the pad contacting the fuse body (3A) is 0.25 to 0.90 μm (Office Action at page 7).

The Office Action readily admits that AAPA fails to disclose that the length of the fuse body is 1.8 μm to 20 μm (Office Action at page 6).

Bohr - The Office Action contends that Bohr discloses the length of the fuse body is 1.8 to 20 μm (Fig 1B, length of fuse body is 118, col 4 lines 1-5 describes length 118 as four to twenty-five times width of 117 which is 0.22 μm , so length 118 ranges from 0.88 to 5.5 μm which overlaps the claimed range) (Office Action at page 6).

In response, Figure 1B of Bohr is provided hereinbelow.

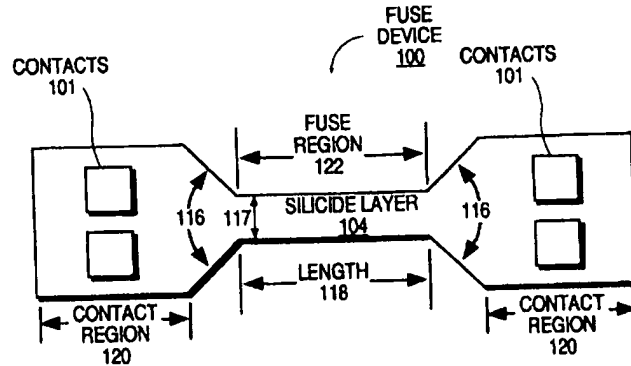


FIG. 1B

Bohr arguably teaches that in one embodiment, the width 117 of the fuse region from the top view shown in FIG. 1B is close to the lower limit of the process technology used to form the fuse device 100, about 0.22 microns in one example, and the length 118 is between four to twenty-five times the width 117 of the fuse region 122 (Bohr at column 3, line 65 to column 4, line 3).

In a particular embodiment, the length 118 is about 10 times the width 117, but may be larger or smaller in other embodiments (Bohr at column 4, lines 3-5).

Bohr arguably discloses that the fuse device 100 includes a fuse region 122, also referred to herein as a fuse element, between two contact regions 120 (Bohr at column 3, lines 46-48).

The fuse device 100 may also include tapered transitional regions 116 between either end of the fuse region 122 and the respective contact region 120 (Bohr at column 3, lines 48-51).

Nevertheless, although claim 19 may include the length (L1) of the fuse body (3A) being 1.8 μm to 20 μm , the fuse body (3A) of claim 19 includes a fuse line (3Aa) and two connections (3Ab).

Conversely, Bohr fails to disclose, teach, or suggest the length 118 as referring to both the fuse region 122 and the transitional regions 116.

Thus, Bohr fails to disclose, teach, or suggest the length of the fuse region 122 and the transitional regions 116 being 1.8 μm to 20 μm .

The Office Action readily admits that Bohr does not explicitly disclose the distance from the contact regions connecting the conductive layers and the pads to the pad edges contacting the fuse body is 0.25 μm to 0.90 μm (Office Action at page 7).

The Office Action readily admits that Bohr does not explicitly disclose the does not explicitly disclose the width of the portion of the conductive layers including the contact regions (120) (Office Action at page 8).

As a gap-filler, the Office Action contends that based on the scale of the drawings and the discussion that the dimensions can vary, optimizing the width of the conductive layers would not be cause for undue experimentation (Office Action at page 8).

- *Thus, AAPA and Bohr, either individually or as a whole, fail to disclose, teach, or suggest a device wherein at least one of the following is present:*

(a) the width (W3) of said conductive layer (5A) is 6 μm to 14 μm ,

(b) the distance (D4) between said fuse line (3Aa) and said opening (4A) is 0.25 μm to 0.90 μm ,

(c) said length (L1) of the fuse body (3A) is 1.8 μm to 20 μm .

Allowance of the claims is respectfully requested.

Official Notice

There is no concession as to the veracity of Official Notice, if taken in any Office Action. An affidavit or document should be provided in support of any Official Notice taken. 37 CFR 1.104(d)(2), MPEP § 2144.03. See also, *Ex parte Natale*, 11 USPQ2d 1222, 1227-1228 (Bd. Pat. App. & Int. 1989)(failure to provide any objective evidence to support the challenged use of Official Notice constitutes clear and reversible error).

Extensions of time

Please treat any concurrent or future reply, requiring a petition for an extension of time under 37 C.F.R. §1.136, as incorporating a petition for extension of time for the appropriate length of time.

Fees

The Commissioner is hereby authorized to charge any deficiency in fees filed, asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm).

The Commissioner is hereby authorized to charge all required fees, fees under 37 C.F.R. §1.17, or all required extension of time fees.

If any fee is required or any overpayment made, the Commissioner is hereby authorized to charge the fee or credit the overpayment to Deposit Account # 18-0013.

Conclusion

This response is believed to be a complete response to the Office Action.

Applicants reserve the right to set forth further arguments supporting the patentability of their claims, including the separate patentability of the dependent claims not explicitly addressed herein, in future papers.

For the foregoing reasons, all the claims now pending in the present application are allowable, and the present application is in condition for allowance.

Accordingly, favorable reexamination and reconsideration of the application in light of the remarks is courteously solicited.

If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone Brian K. Dutton, Reg. No. 47,255, at 202-955-8753.

Dated: January 21, 2009

Respectfully submitted,

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